CHAPTER 3

System Installation

This chapter provides you with instructions on how to set up and configure your system. The additional information shows you how to install M-system Flash disk and handle WDT operation in software program.

3-1 Socket 7 Processor

Installing CPU

1) Lift the handling lever of CPU socket outwards and upwards to the other end.
2) Align the processor pins with pin holes on the socket. Make sure that the notched corner or dot mark (pin 1) of the CPU corresponds to the socket's bevel end. Then press the CPU gently until it fits into place. If this operation is not easy or smooth, don't do it forcibly. You need to check and rebuild the CPU pin uniformly.
3) Push down the lever to lock processor chip into the socket.
4) Follow the installation guide of cooling fan or heat sink to mount it on CPU surface and lock it on the socket 7.
5) Be sure to follow particular CPU speed and voltage type to adjust the jumper settings properly.

Removing CPU

1) Unlock the cooling fan first.
2) Lift the lever of CPU socket outwards and upwards to the other end.
3) Carefully lift up the existing CPU to remove it from the socket.
4) Follow the steps of installing a CPU to change to another one or place handling bar to close the opened socket.

3-2 Main Memory

ROBO-598 provides three DIMMs (168-pin Dual In-line Memory Module) to support on-board main memory. The maximum memory size for 3V SDRAM or EDO DRAM is 768MB. Normally, the DIMM used could be 3.3V EDO (Extended Data Out) or 3.3V SDRAM (Synchronized DRAM) with speed less than 100ns (-10) for 66MHz system bus clock. If you adopt 100MHz system clock, you need to use SDRAM with speed less than 80ns (-8). **It is better to use PC100-compliant memory chip.**

For system compatibility and stability, don't use memory module without brand. You can also use the single or double-side DIMM with parity bit to support parity check and ECC function. The three DIMMs can be out of order. You can install different size of DRAM module on DIMM1, DIMM2 or DIMM3 or all to boot up system.

Watch out the contact and lock integrity of memory module with socket, it will impact on the system reliability. Follow normal procedure to install your DRAM module into memory socket. Before locking, make sure that the module has been fully inserted into the card slot.

NOTE : For maintaining system stability, don't change any of DRAM parameters in BIOS setup to upgrade your system performance except for getting technical information.

3-3 M-system Flash Disk

ROBO-598 reserves one 32-pin DIP socket (U27) for installing M-system Flash disk from 2MB to 72MB. This operation structure is running with pure ISA-bus without PnP (Plug and Play) function. Before installing, make certain that I/O address jumper setting is set on right position to prevent unworkable system from I/O resource conflict. Besides, pin-1 of DOC (Disk-On-Chip) must be matched with the pin-1 of socket. Otherwise, the Flash chip is possible to be burned out due to incorrect installation.

If installation procedure is correct, the Flash disk can be viewed as a normal hard disk to access read/write data. If you want to boot from this Flash disk, it is necessary to refer to the application note from M-system. You can get this data from M-system shipping package or Web-site.

3-4 Installing the Single Board Computer

To install your ROBO-598 into standard chassis or proprietary environment, you need to perform the following :

- ☐ Step 1 : Check all jumpers setting on proper position
- ☐ Step 2 : Install and configure CPU and memory module on right position
- ☐ Step 3 : Place ROBO-598 into the dedicated position in your system
- ☐ Step 4 : Attach cables to existing peripheral devices and secure it

3-5 Watch Dog Timer Programming

An optional two-port Watch-Dog Timer (WDT) is provided on ROBO-598. If this feature is enabled by jumper setting and software trigger, a system reset will be generated unless the CPU triggers the timer periodically within time-out period. This allows the system to restart in an orderly way in case of a power failure or any abnormal condition is found.

This WDT comes with 8 possible ranges of time intervals from 500 ms to 64 sec. which is adjustable by setting jumper positions. It could be enabled and programmed by reading I/O port 443H or 433H to issue trigger continuously, and disabled by reading I/O port 343H or 033H. A tolerance of 30% timer limit must be considered. For instance, if the time-out interval is set to 1 second, the WDT trigger command must be issued within 700ms at least.

The below example gives you a sample algorithm for WDT programming via I/O port 433H and 033H in your application program :

Enable WDT

```
MOV     DX, 0433H
IN      AL, DX
```

Re-trigger WDT

```
MOV     DX, 0433H
IN      AL, DX
```

Disable WDT

```
MOV     DX, 0033H
IN      AL, DX
```

3-6 Drivers Support

The ROBO-598 provides the following drivers stored in CD-title. You can easily use it to attach IDE driver for bus master function, AGP and Graphics drivers for graphic acceleration in your O.S. environment.

- ☐ AGP driver for Windows 95
- ☐ IDE driver for Windows 95, 3.1, NT, and Novell
- ☐ Graphics driver for Windows 95, 3.1, NT, and OS/2

These drivers stored in CD-title will be periodically updated to meet changing environments.